From: Darton,Terry
Sent: Thursday, October 18, 2007 9:52 AM
To: Sydnor,James
Cc: Beeson,Gary
Subject: RE: Follow-up on Our Discussion Yesterday
Yes we will.

Terry

-----Original Message-----
From: Sydnor,James
Sent: Thursday, October 18, 2007 8:51 AM
To: Darton,Terry
Subject: FW: Follow-up on Our Discussion Yesterday

Terry, I assume you all will address these technical points raised by the City in your review for the final SOP before it goes to the Board?

James E. Sydnor
Director, Air Quality Division
Va. Dept. of Env. Quality
804-698-4424

-----Original Message-----
From: Kiss,Michael
Sent: Tuesday, October 16, 2007 10:34 AM
To: Sydnor,James; Thompson,Tamera; Golden,James; Faha,Thomas; Brooks,Jerome; Darton,Terry; Beeson,Gary; Breathwaite,Troy; Hartshorn,David; Wilkinson,Justin; Weeks,Richard
Subject: FW: Follow-up on Our Discussion Yesterday

FYI. Summary of conversation I had yesterday. I called them to request information on the PM2.5 monitoring data for our review.

Mike

Mike Kiss
Coordinator, Air Quality Assessments Group
Air Division - Office of Data Analysis
Virginia DEQ - Central Office
629 East Main Street
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-----Original Message-----
From: KhoaDinh.Tran@alexandriava.gov [mailto:KhoaDinh.Tran@alexandriava.gov]
Sent: Tuesday, October 16, 2007 10:18 AM
To: Kiss,Michael
Cc: maureen@aeroengineering.com; MJINDAL@mactec.com; JBritton@Schnader.com; Ignacio.Pessoa@alexandriava.gov; William.Skrabak@alexandriava.gov; Lalit.Sharma@alexandriava.gov
Subject: Follow-up on Our Discussion Yesterday

Dear Mike,

I really enjoyed our technical discussion yesterday. This e-mail is to follow up on some of the points that we discussed.

Higher CO Emission Levels Associated with the Use of Trona

- From the Mirant test results, the City did observe a significant increase in CO emissions as previously reported to VDEQ and the SAPCB. Our "theory" has been that the use of high-pressure air to inject trona in the flue duct increases the off-gas oxygen concentration, leading to an automatic action by the combustion control system to reduce the combustion air flowrate in order to maintain the same off-gas oxygen setpoint. To illustrate this point, assuming an off-gas having a flowrate of 240,000 scfm and being controlled at 3% O2 (i.e., 7,200 scfm of O2). If the trona transporting air amounts to 10,000 scfm, it would contain 2,100 scfm of O2. Thus the combined off-gas would contain 9,300 scfm of O2, i.e., 3.72% O2. The combustion control system would then reduce the combustion air by 10,000 scfm in order to maintain the 3% O2 setpoint. Obviously, this theory only works if the oxygen sensor is located downstream of the trona injection point which I think it is the case.
- You asked a good question on whether we would see a reduction in NOx emissions with the use of trona and the answer is yes. Mirant Dec. 2006 PM test data indicated an average NOx emissions of 149 ppm for runs 2,3,6 with trona off and 138 ppm for runs 1,4,5 with trona on (7.6% reduction with trona on).
- However, our main point is that **CO emissions have been extremely high with or without trona** (reaching over 1,000 ppm on several occasions), pointing to the deficiency in the plant low-NOx burners and SOFA technology. These technologies do increase CO emissions! Mirant has to be given a permit limit keeping CO emissions below 100 ppm **at all times**. For comparison, the COVANTA waste-to-energy plant in Alexandria maintains a CO level of 50 ppm while burning a much more difficult-to-burn waste.

PM Emissions Limit of 0.055 lb/MMBtu Is not Really a Limit

- At Mirant's recent open house on October 13, the plant manager reported the plant's 2006 environmental performance to the public. PM emissions were reported to be 0.03 lb/MMBtu. The December 2006 stack test results showed a range of 0.0133 - 0.0145 lb/MMBtu for PM10 including condensible PM. Our strong opinion is that VDEQ has no basis at all to set the 0.055 lb/MMBtu for the plant.
- I just want to reiterate our belief that **there is no credible evidence so far that shows a reduction in PM10 with the use of trona** while the plant data (~20,000 data points) clearly shows that **opacity increases consistently for every boiler with the use of trona**. The dec. 2006 Mirant PM10 test results for filterable PM illustrate my point:

	Trona ON	Trona OFF
HESP PM10 Removal Efficiency, % (97.72-99.76)	98.99 (98.56-99.47)	99.01

CESP PM10 Removal Efficiency, %	88.83 (82.94-93.21)	71.24 (49.83-90.56)
Overall PM10 Removal Efficiency, %	99.90 (99.90-99.91)	99.85 (99.78-99.88)

- We have a lot of doubt about the validity of the above results considering the fact that for one test with trona OFF, the cold ESP (CESP) removal efficiency was only a meagre 49.83% while the design value for this ESP was 96%. Notice that the removal efficiency for the hot ESP (HESP) was the same with and without trona. A cyclone would most likely give a better performance than 49.83%!

I urge you and your colleagues at VDEQ to consider these points in your developing the SOP for this power plant. Please give me a call if you require further information.

By the way, I have asked Malay and his colleague to give you a call to find out what information you require for our PM2.5 monitoring station.

Regards,

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